Genuine BMW Accessories.
Installation Instructions.

NightVision retrofit
BMW 7 Series (E65)

These installation instructions are only valid for cars with SA 601 (TV function), SA 603 (rear-compartment monitor) or SA 609 (navigation system) from 09/05.

Retrofit kit no.:	84 21 0 303 092	Retrofit kit cable for NightVision
	66 21 0 422 870	Retrofit kit cable for NightVision
	66 21 0 422 871	Retrofit kit cable for NightVision

Installation time

The installation time is **approx. 4-5 hours**, but this may vary depending on the condition of the car and the equipment in it.

Before starting the modification work, always flash the vehicle up to the latest I-level. Depending on the production age of the car and the work already carried out on it, the programming times will vary which means that we cannot quote a specific time for this. The installation time does not include any time for programming/encoding as this depends on the age of the car and the equipment in it.

Important information

These installation instructions are primarily designed for use within the BMW dealership organisation and by authorised BMW service companies.

In any event, the target group for these installation instructions is specialist personnel trained on BMW cars with the appropriate specialist knowledge.

All work must be completed using the latest BMW repair manuals, circuit diagrams, servicing manuals and work instructions, in a rational order, using the prescribed tools (special tools) and observing current health and safety regulations.

If any installation or function problems occur, limit the troubleshooting session to approx. 0.5 hours for mechanical work or 1.0 hour for electrical work.
To avoid unnecessary extra work and/or costs, send a request immediately to Technical Support via the Aftersales Assistance Portal (ASAP).
At the same time, provide the following information:

- vehicle identification number,
- part number of the retrofit kit,
- precise description of the problem,
- operations already performed.

Do not archive the hard copy of these installation instructions since daily updates are made by ASAP!

All pictures show LHD cars; proceed accordingly on RHD cars.

Pictograms

 Denotes instructions that draw your attention to dangers.

 Denotes instructions that draw your attention to special features.

◂ Denotes the end of the instruction or caution text.

Installation Information

Ensure that the cables/lines are not kinked or damaged as you install them in the car. Costs incurred as a result of this will not be reimbursed by BMW AG.

Additional cables/lines that you install must be secured with cable ties.

If the specified PIN chambers are occupied, bridges, double crimps or twin-lead terminals must be used.

Fuse link from connecting point **A3** must be attached and clearly visible on fuse carrier **A48** in the glove box.

Information for ordering parts

Cable adapter **E** and the lights control unit **C** are not included in the delivery specification and must be ordered separately.

List of optional equipment

The following optional equipment must be taken into account during the assembly of the retrofit kit:

SA 601 TV function
SA 603 Rear monitor
SA 609 Navigation system

Special tools required

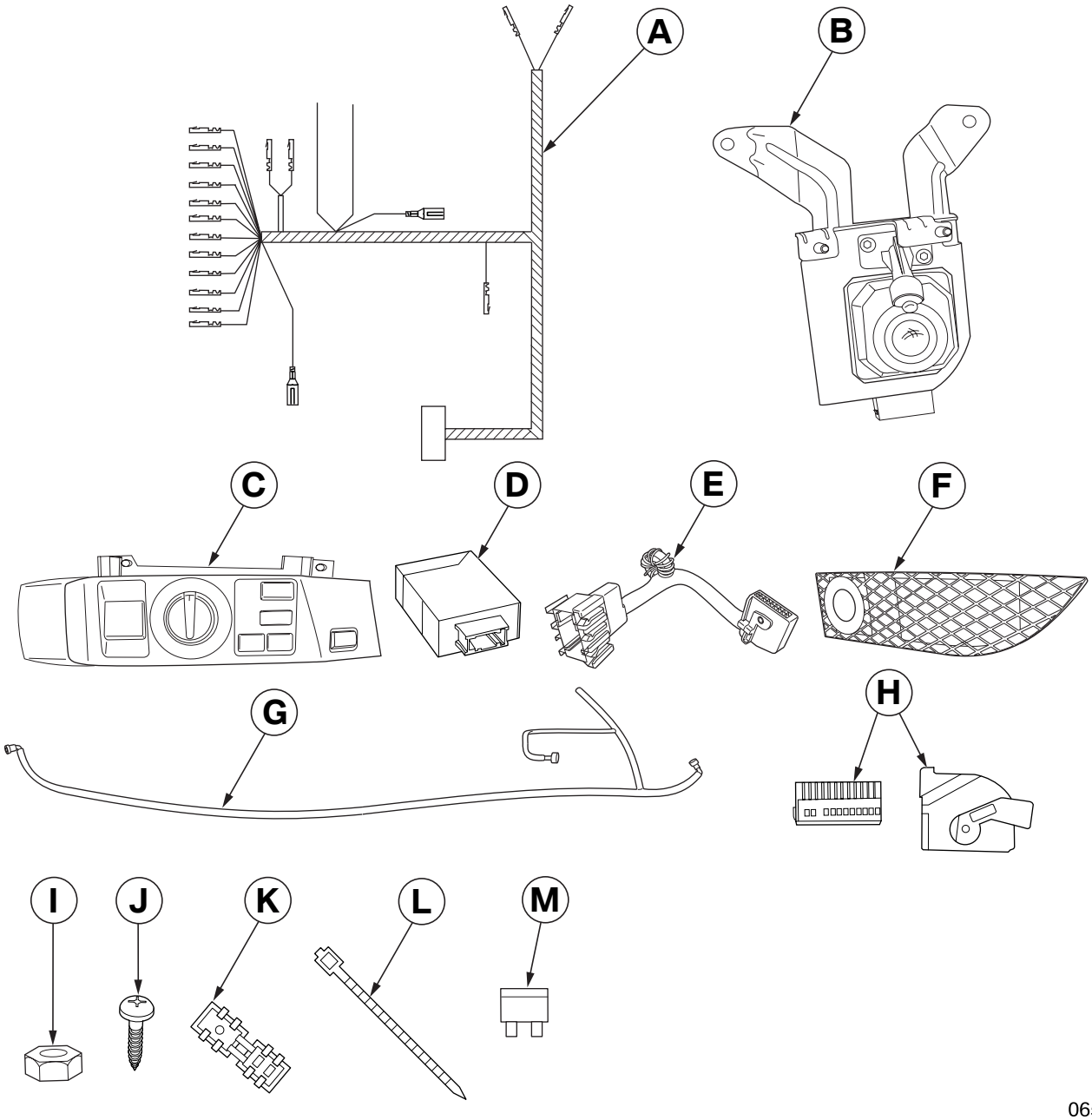
65 5 400, release tool for navigation computer

Information for customers

The "Customer information" chapter at the end of the Installation Instructions must be printed out and handed over to the customer.

Contents

1. Parts overview



065 0026 E

Legend

A NightVision cable kit (1 piece)

B NightVision camera (1 piece)

C Lights control unit (1 piece)

D NightVision controller (1 piece)

E Adapter cable (1 piece)

F Left grill (1 piece)

G High pressure line (1 piece)

H Plug socket with housing (1 piece)

I Hexagon nut (2 pieces)

J Sheet metal screw (1 piece)

K Miniconnectors (3 pieces)

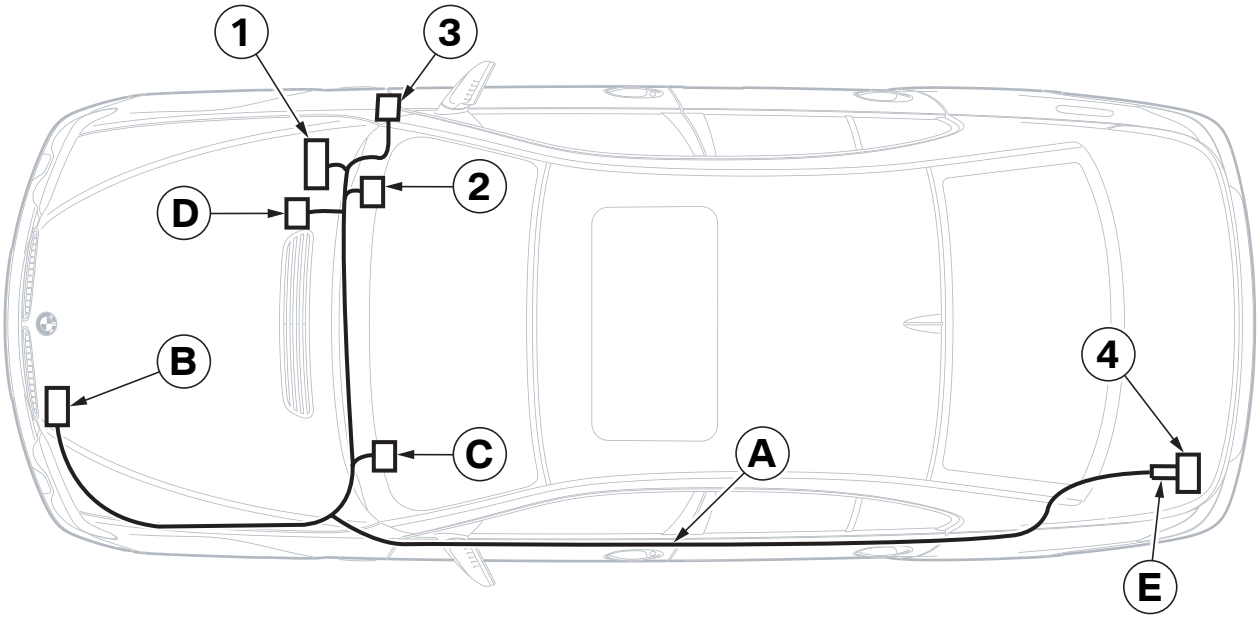
L Cable clips (30 pieces)

M Fuse, 10A (1 piece)

2. Preparatory work

	TIS No.
Perform quick test	—
Disconnect negative terminal of battery	12 00 ...
Dismantle the following components in advance	
Rear seat	52 24 005
Right glove compartment	51 16 367
Left air filter box	
Entrance strip front, left and right	51 47 000
Entrance strip, rear left	51 47 030
B-column trim, left	51 43 150
Luggage compartment floor covering	51 47 101
Rear seat back left, in vehicles with split rear seats	52 24 015
Luggage compartment wheel housing, left	51 47 151
Lights control unit	61 31 037
Bumper trim, front	51 11 156
Panel trim, footwell on A-column, left	51 43 070
Panel trim, footwell on A-column, right	51 49 075
Panel, pedal	51 45 185
High pressure line SRA/NightVision camera	61 67 010
Navigation computer	65 90 511
Video module	65 50 011

3. Installation and cabling diagram



065 0002 E

Legend

A NightVision cable set

B NightVision camera assembly

C Lights control unit

D NightVision controller

E Cable adapter

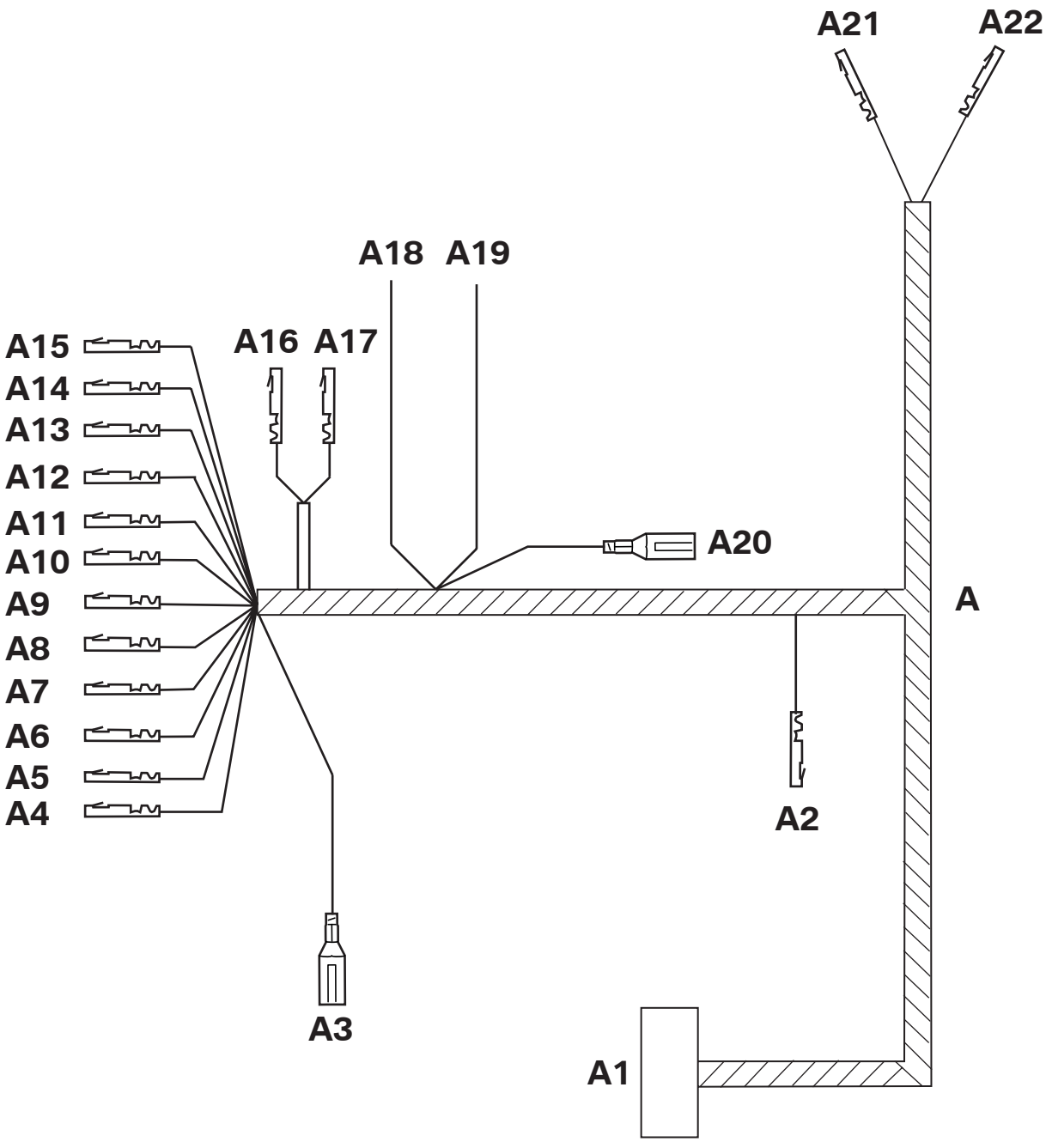
1 Fuse carrier **X10456**

2 Ground loom **X10012**

3 K-CAN terminal **X10582**

4 Video module/navigation module/video switch-US

4. Overview of connections



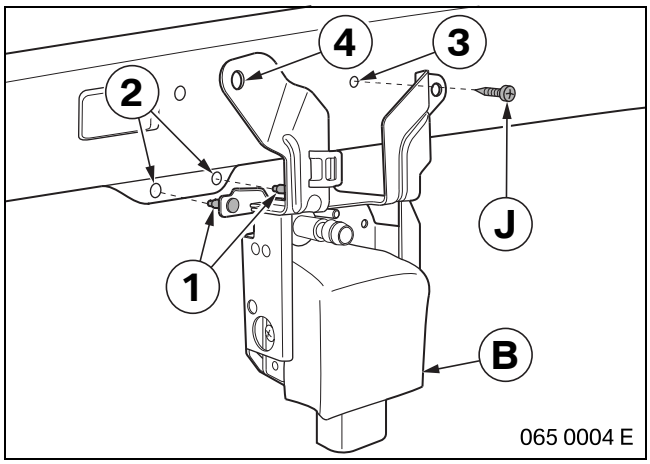
065 0003 E

Item	Description	Signal	Wire colour / cross section	Connection location in vehicle	Designation/ plug-in location
A	NightVision cable set	- - -	- - -	- - -	- - -
A1	12-pole socket housing SW	- - -	- - -	On NightVision camera	X16665
A2	Female contact	S-NiVi	BL 0.35 mm²	On lights control unit **S8**	X13339 PIN 4
A3	Flat male connector	30g	RT/GN 0.75 mm²	On glove compartment **A48** fuse carrier Fuse 24	X10456 PIN 8
A4	Female contact	Lin_Signal	VI 0.35 mm²	On NightVision controller **A859**	X16664 PIN 12

4. Overview of connections

Item	Description	Signal	Wire colour / cross section	Connection location in vehicle	Designation/ plug-in location
A5	Female contact	Lin_bus	BR/GE 0.35 mm²	On NightVision controller **A859**	X16664 PIN 13
A6	Female contact	S_NightVision	BL 0.35 mm²	On NightVision controller **A859**	X16664 PIN 3
A7	Female contact	Terminal 31	SW/BR 0.75 mm²	On NightVision controller **A859**	X16664 PIN 17
A8	Female contact	Terminal 31	BR/SW 0.75 mm²	On NightVision controller **A859**	X16664 PIN 14
A9	Female contact	Cam-power	RT/BL 0.75 mm²	On NightVision controller **A859**	X16664 PIN 16
A10	Female contact	CAN-high	OR 0.35 mm²	On NightVision controller **A859**	X16664 PIN 10
A11	Female contact	CAN-low	GN 0.35 mm²	On NightVision controller **A859**	X16664 PIN 1
A12	Female contact	30g	RT/GN 0.75 mm²	On NightVision controller **A859**	X16664 PIN 5
A13	Female contact	Video GND	WS/RT 0.35 mm²	On NightVision controller **A859**	X16664 PIN 7
A14	Female contact	Video	WS/GN 0.35 mm²	On NightVision controller **A859**	X16664 PIN 6
A15	Female contact	Screen	TR 0.35 mm²	On NightVision controller **A859**	X16664 PIN 15
A16	Female contact	FBAS	SW 0.35 mm²	On NightVision controller **A859**	X16664 PIN 9
A17	Female contact	Screen	TR 0.35 mm²	On NightVision controller **A859**	X16664 PIN 18
A18	Open end of wire	CAN-low	GN 0.35 mm²	On CAN terminal with miniconnector	X10582
A19	Open end of wire	CAN-high	OR 0.35 mm²	On CAN terminal with miniconnector	X10582
A20	Flat male connector	Terminal 31	BR/SW 0.75 mm²	On ground loom connector, passenger footwell	X10012
A21	Female contact	Screen	TR 0.5 mm²	**With SA 609 and SA 601 without SA 603, with SA 601 without SA 603, with SA 601 and SA 603**, from video module **A197**, socket-housing, WS, 18-pole **With SA 609, with SA 609, SA 601 and SA 603**, on navigation system **A112**, socket housing, GN, 18-pole **Only US,** on video switch, socket housing, WS, 18-pole	X18804 PIN 10 X1313 PIN 11 X18804 PIN 10
A22	Female contact	FBAS	SW 0.5 mm²	**With SA 609 and SA 601 without SA 603, with SA 601 without SA 603, with SA 601 and SA 603**, from video module **A197**, socket-housing, WS, 18-pole **With SA 609, with SA 609, SA 601 and SA 603**, on navigation system **A112**, socket housing, GN, 18-pole Only **US**, on video switch, socket housing, WS, 18-pole	X18804 PIN 1 X1313 PIN 3 X18804 PIN 1

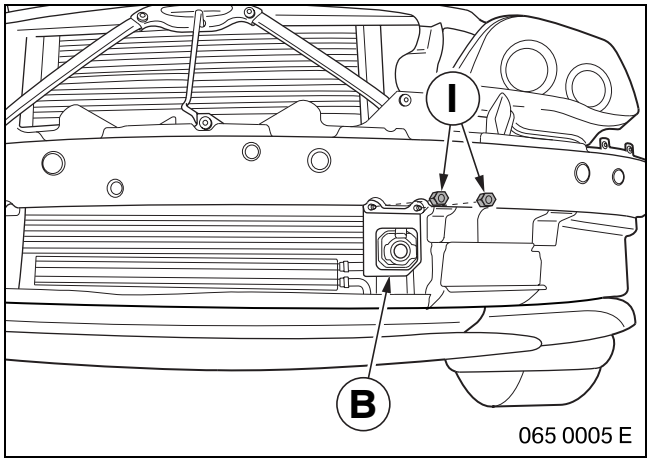
5. Installing NightVision



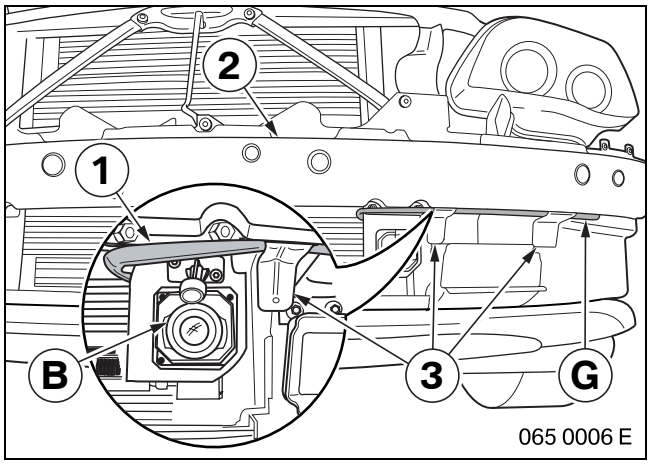
Aluminium mounting of front bumper. ◂
Insert stud (1) of assembly camera **B** in the existing bore holes (2) of the aluminium mounting from rear.

Screw mounting camera **B** into the existing bore hole (3) from rear using sheet-metal screw **J**.

The left mounting (4) is not used.



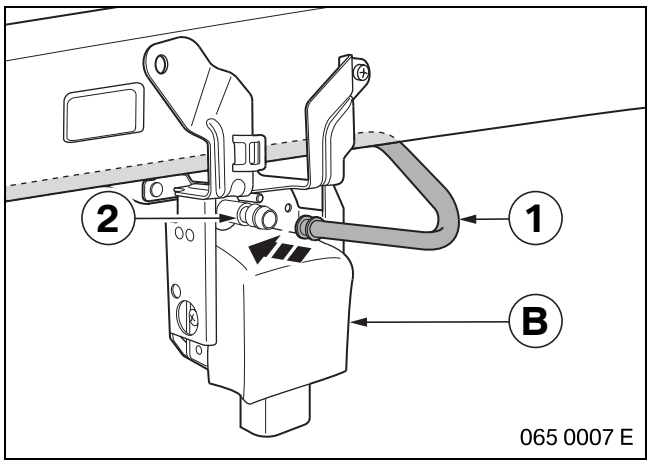
Fasten camera **B** from the front using hexagon nuts **I**.



Install high pressure line **G** according to **TIS 61 67 010**.

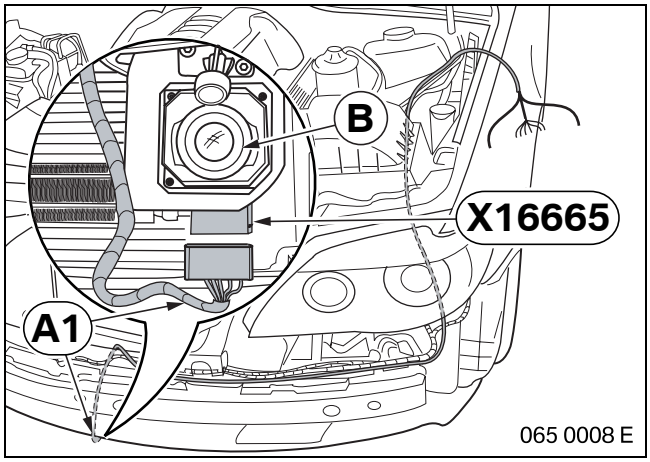
Route the branch (1) of high pressure line **G** to camera **B** beneath the aluminium mounting (2).

Route branch (1) between aluminium support (2) and tabs (3). ◂



Connect branch (1) of high pressure line to the injection nozzle (2) of camera **B** from rear.

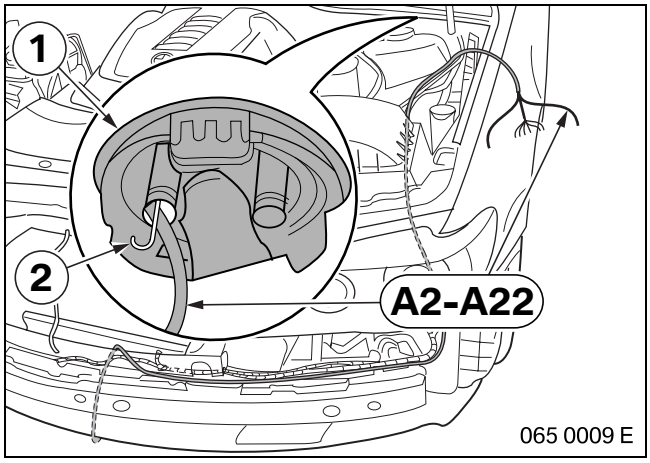
5. Installing NightVision



Route connecting point **A1** to camera **B** along the vehicle wiring harness.

Connect connecting point **A1** to connection **X16665** of camera **B**.

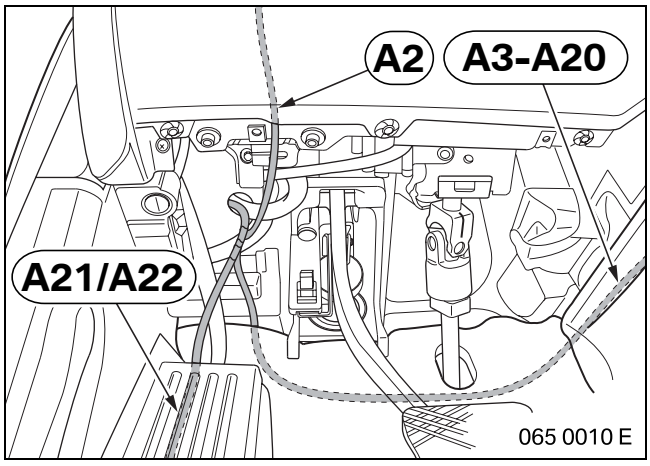
When installing the front bumper, insert grill left **F** into the front bumper (not shown).



Pull connecting points **A2** to **A22** into the car interior through the rubber grommet (1).

Use draw-in tool (2). ◂

Correctly seal the rubber grommet (1) using Sikaflex.

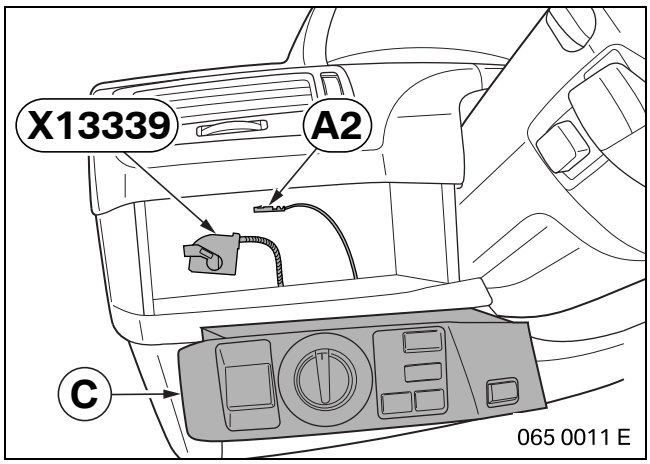


Route the connecting points as follows:

Connecting points **A21** and **A22** to video module/navigation computer/video switch in left luggage compartment.

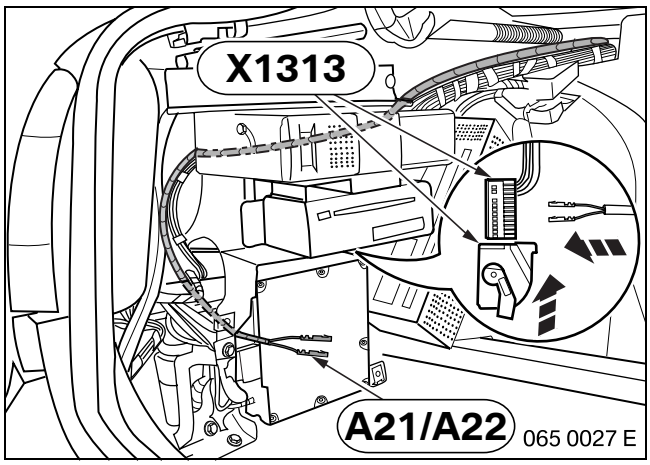
Connecting point **A2** to lights control unit.

Route connecting points **A3** to **A20** behind the heater to the fuse carrier in the glove box.



Pin connecting point **A2**, BL, into connector **X13339**, PIN 4.
Install lights control unit **C**.

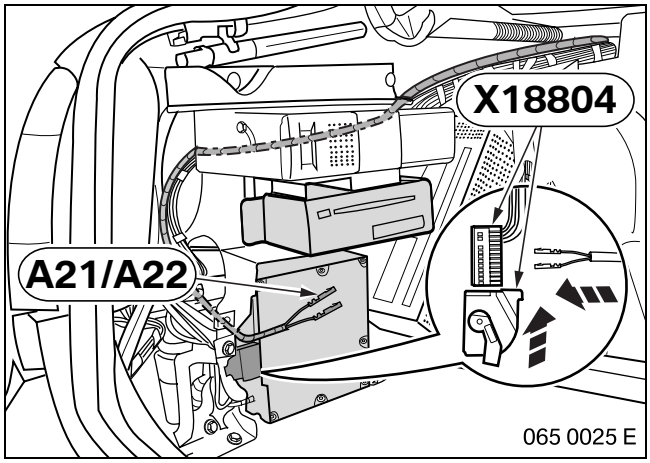
5. Installing NightVision



Only for cars with SA 609 and cars with SA 609, SA 601 and SA 603.

Pin the connecting points into navigation system **X1313**, GN as below:

A21, TR, in PIN 11.
A22, SW, in PIN 3.



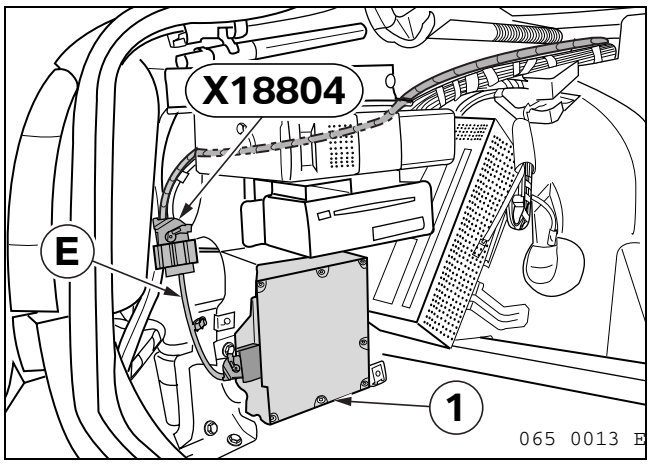
Only for cars with:

- **SA 609 and SA 601 without SA 603.**
- **SA 601 without SA 603.**
- **SA 601 and SA 603.**

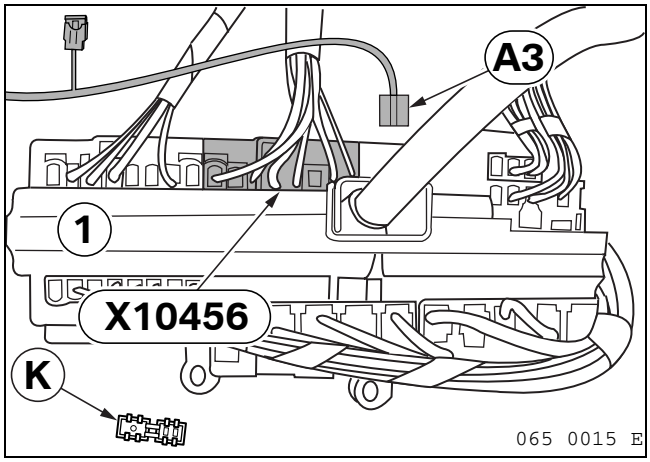
Pin the connecting points as follows into the video module/ video switch plug **X18804**, WS:

A21, TR, in PIN 10.
A22, SW, in PIN 1.

Comply with the instructions on handling fibre optics. ◂



Plug cable adapter **E** between **X18804** and video module/ video switch-US (1).

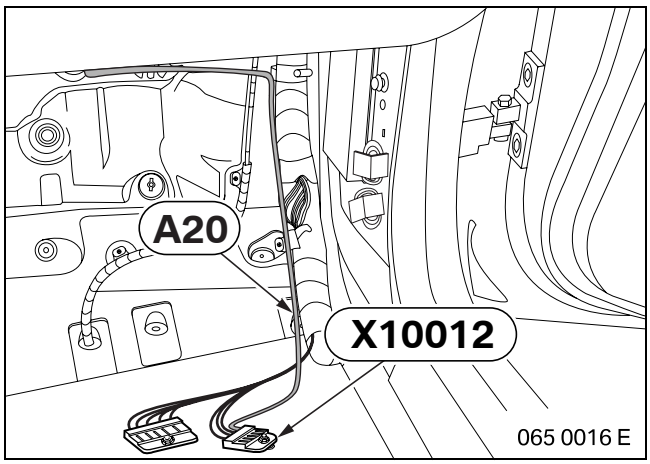


For all vehicles.

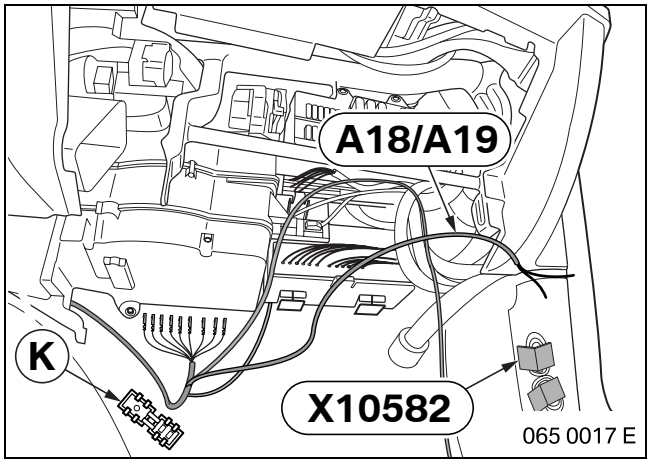
Plug connecting point **A3**, RT/GN, into the fuse carrier in the glove box (1) **X10456**, PIN 8.

If PIN 8 is occupied, separate the plug contact at connecting point **A3** and attach the parallel stop with miniconnector **K**.

5. Installing NightVision

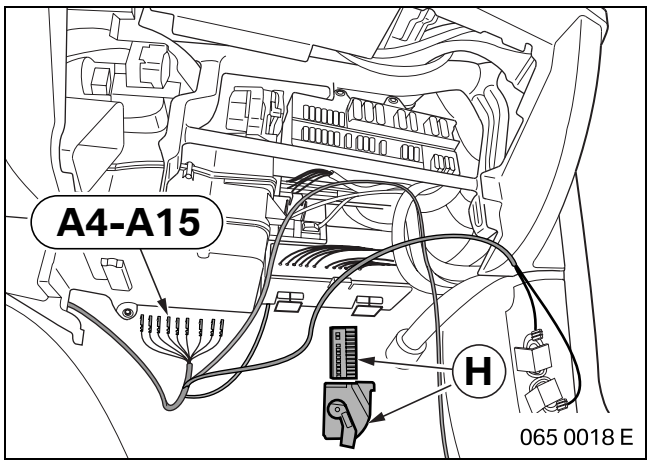


Insert connecting point **A20**, BRSW into ground loom connector **X10012** in front passenger footwell.



Connect the connecting points as follows **with the correct colours** to CAN terminal with the miniconnector **K** in the passenger footwell, A-column:

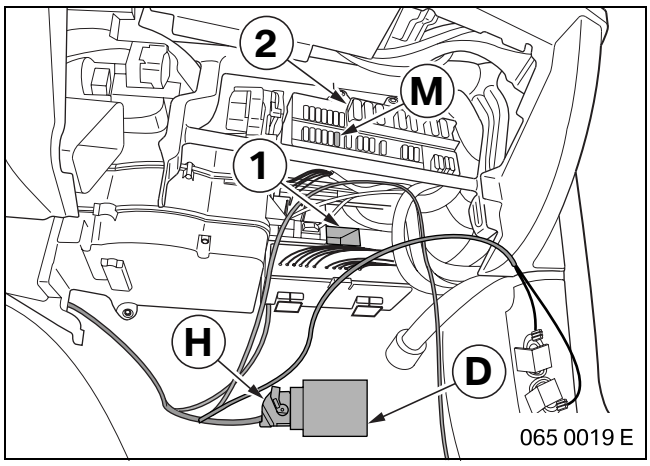
A18, GN, on **X10582**.
A19, OR, on **X10582**.



Pin connecting points in bushing housing **H** in the passenger footwell as follows:

A4, VI, in PIN 12.
A5, BRGE, in PIN 13.
A6, BL, in PIN 3.
A7, SWBR, in PIN 17.
A8, BRSW, in PIN 14.
A9, RTBL, in PIN 16.
A10, OR, in PIN 10.
A11, GN, in PIN 1.
A12, RTGN, in PIN 5.
A13, WSRT, in PIN 7.
A14, WSGN, in PIN 6.
A15, TR, in PIN 15.

5. Installing NightVision



Insert plug housing **H** into controller **D**.

Push controller **D** into free slot in the device carrier (1) behind the fuse carrier (2).

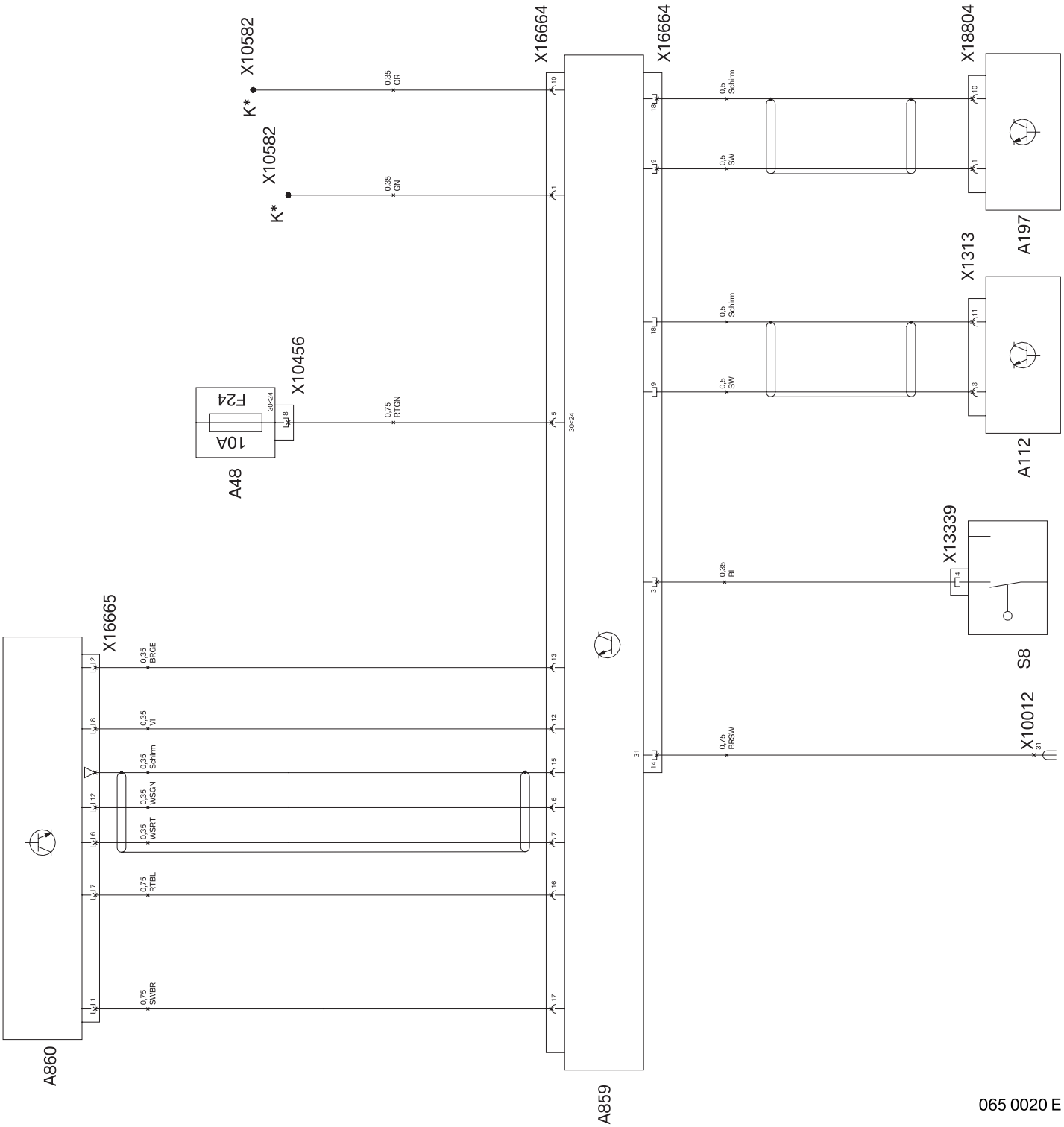
Insert fuse **M** into slot 24. If slot 24 is already fused with more than 10A, fuse **M** is not required.

If slot 24 is fused with less than 10A, it must be replaced with fuse **M**. ◂

6. Finishing off and encoding

– Connect the vehicle battery.
– Code/program retrofit with DISPlus or GT-1 via path **Retrofit/CIP**.
– Adjust the camera axially and vertically as described in the repair manual.
– Perform a short test.
– Perform a function test.
– Reassemble the vehicle analogously.

7. Circuit diagram



7. Circuit diagram

Key

A48	Fuse carrier, front
A112	Navigation computer
A197	Video module/video switch-US
A859	Controller, NightVision
A860	Camera, NightVision
K*	Miniconnector
S8	Lights control unit
X1313	Plug housing, 18-pole, green, on navigation computer
X10012	Ground loom
X10456	Plug socket, 8-pole, natural, on fuse carrier, front
X10582	K-Can terminal
X13339	Plug socket, 18-pole, black, on lights operating control
X16664	Plug socket, 18-pole, black, on NightVision control unit
X16665	Plug socket, 12-pole, black, on NightVision camera
X18804	Plug socket, 18-pole, white, on video module /video switch-US

All designations marked with an * apply only to these installation instructions or this circuit diagram.

Caution! Video module/video switch US **A197** or navigation computer **A112** is optionally connected depending on the equipment in the car.

Cable colours

RT	Red
BR	Brown
WS	White
BL	Blue
VI	Violet
GE	Yellow
SW	Black
OR	Orange
GN	Green
TR	Transparent

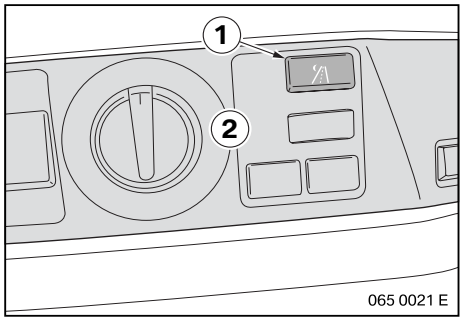
8. Customer information

Conditions required for switching on NightVision

For NightVision to function, one of the following basic conditions is required:

– The rain driving light sensor detects sufficient ambient light and the driving light is switched off:
The BMW NightVision is operational approx. 2 seconds after the button (1) in the light switch centre (2) is pressed. A message is shown on the control display during these two seconds.
– The rain driving light sensor detects insufficient ambient light and the driving light is switched on:
The BMW NightVision is immediately operational after the button (1) is pressed.
– In darkness (underground car park), the driving light is switched off and the car's road speed is less than 5 km/h:
The BMW NightVision is operational after the button (1) in the light switch centre (2) is pressed.

For safety reasons the NightVision function is **not** possible while driving (at speeds greater than 5 km/h) in darkness without the driving light.
In this case, a message appears on the control display that informs the driver that the system cannot be used at night.



Rear equipment

In cars with rear compartment equipment there are some restrictions on which functions can be shown on the control display and the rear display:
If the navigation is called up on the rear screen during active BMW NightVision which functions exclusively on the control display, NightVision is ended. BMW NightVision can be reactivated on the control display by pressing the BMW NightVision button (1) or "Back".
The message then appears on the rear screen that the navigation or BMW Online can only be displayed on the rear screen when BMW NightVision is deactivated.

Operation via iDrive

Via iDrive, the individual iDrive functions and settings can be selected and activated.

Please refer to the extensive description of how to operate BMW NightVision in the BMW operating instructions. ◂

In any case, always adapt the car's driving speed to the respective visibility conditions. BMW NightVision is designed as a support system, providing an earlier and clearer view of the situation in front of the vehicle for drivers who operate the vehicle in a manner suitable to road conditions. ◂

Fusing

The BMW NightVision is fused with a 10A inline fuse in the fuse carrier in the glove box.
In addition, BMW NightVision is fused in slot 24 of the fuse carrier in the glove box.